

Docket Number: 081468-0306527
Client Reference: P-0382.010-US

Free
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

ARNO JAN BLEEKER

Group Art Unit: ~~2881~~ 2851

Application No.: 10/715,116

Examiner: Unassigned *Fuller*

Filed: November 18, 2003

Confirmation No.: 3978

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

February 1, 2005

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
<i>RA</i>	STREEFKERK et al. (081468-0309796)	10/850,451	05/21/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>RA</i>	MULKENS (081468-0310380)	10/890,389	07/14/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>RA</i>	STREEFKERK et al. (081468-0309421)	10/844,575	05/13/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>RA</i>	SUWA et al. (Reissue Application of U.S. Patent No. 6,191,429 B1)	10/367,910	02/19/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Other: stamped receipt card

*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.

It is respectfully requested that these applications and the art cited therein during examination be expressly considered during the prosecution of this application and be made of record in this application. The identification of the above U.S. patent applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent.

R. J. Bleeker 3/8/05



Atty. Dkt. No.	M#	Client Ref.
	0306527	P-0382.010-US

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

Applicant: Arno J. BLEEKER

Appln. No.: 10/715,116

Filing Date: November 18, 2003

Date: February 1, 2005

Page 1 of 2

Examiner: Unknown

Group Art Unit: 2861 2851

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
PA	AR 4,390,273	06/1983	LOEBACH et al.	355	125	
PA	BR 6,236,634 B1	05/2001	LEE et al.	369	112	
PA	CR 2002/0020821 A1	02/2002	VAN SANTEN et al.	250	492	
PA	DR 2004/0075895 A1	04/2004	LIN	359	380	
PA	ER 2004/0109237 A1	06/2004	EPPEL et al.			
PA	FR 2004/0119954	06/2004	KAWASHIMA et al.	355	30	
PA	GR 2004/0125351	07/2004	KRAUTSCHIK	355	53	
	HR					
	IR					
	JR					

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	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
PA	KR JP 07-132262	05/1995	Japan	HIRAKAWA et al.	X			
PA	LR JP 58-202448	11/1983	Japan	KAWAMURA et al.	X			
PA	MR WO 2004/019128	03/2004	PCT	OMURA et al.	X		X	
PA	NR WO 03/077037	09/2003	PCT	ROSTALSKI et al.	X		X	
PA	OR WO 03/077036	09/2003	PCT	SCHUSTER	X			
PA	PR DD 206 607	02/1984	GERMANY	WESTPHAL et al.		X		
PA	QR DD 221 563	04/1985	GERMANY	PFORR et al.		X		
PA	RR JP 11-176727	07/1999	JAPAN	SHIRAIISHI	X			
PA	SR JP 2000-058436	02/2000	JAPAN	FUJISHIMA et al.	X			

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

PA	TR	S. OWA et al., "Update on 193nm immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51.			
PA	UR	H. HATA, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22.			
PA	VR	T. MATSUYAMA et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004.			
PA	WR	"Depth-of-Focus Enhancement Using High Refractive Index Layer on the Imaging Layer", IBM Technical Disclosure Bulletin, Vol. 27, No. 11, April 1985, p. 6521.			
PA	XR	A. SUZUKI, "Lithography Advances on Multiple Fronts", EEdesign, EE Times, January 5, 2004.			
PA	YR	B. LIN, "The k_3 coefficient in nonparaxial VNA scaling equations for resolution, depth of focus, and immersion lithography, J. Microlith., Microfab., Microsyst. 1(1):7-12 (2002).			
	ZR				

Examiner

Date Considered: 3/8/05

*EXAMINER: Initial citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office



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Applicant: Arno J. BLEEKER

Appln. No.: 10/715,116

Filing Date: November 18, 2003

Date: February 1, 2005

Page 2 Of 2

Examiner: Unknown

Group Art Unit: 2881 2851

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AAR						
BBR						

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		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclose	No
PA	CCR	WO 2004/053950 A1	06/2004	PCT	OWA	X			
PA	DDR	WO 2004/053951 A1	06/2004	PCT	MAGOME et al.	X			
PA	EER	WO 2004/053952 A1	06/2004	PCT	MAGOME et al.	X			
PA	FFR	WO 2004/053953 A1	06/2004	PCT	NEI et al.	X			
PA	GGR	WO 2004/053954 A1	06/2004	PCT	NEI et al.	X			
PA	HHR	WO 2004/053955 A1	06/2004	PCT	HIRUKAWA et al.	X			
PA	IIR	WO 2004/053956 A1	06/2004	PCT	NAGASAKA et al.	X			
PA	JJR	WO 2004/053957 A1	06/2004	PCT	HIDAKA et al.	X			
PA	KKR	WO 2004/053958 A1	06/2004	PCT	MIZUTANI et al.	X			
PA	LLR	WO 2004/053959 A1	06/2004	PCT	SHIRAI	X			
PA	MMR	WO 2004/053956 A2	06/2004	PCT	GRAUPNER	X			
PA	NNR	WO 2004/055803 A1	07/2004	PCT	VAN SANTEN	X		X	
PA	OOR	WO 2004/057589 A1	07/2004	PCT	NEIJZEN et al.	X		X	
PA	PPR	WO 2004/057590 A1	07/2004	PCT	VAN SANTEN et al.	X		X	
PA	QQR	JP 2004-193252	07/2004	Japan	Not Available	X			
PA	RRR	0 605 103 A1	07/1994	EP	TAKAHASHI	X		X	

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

SSR	Search Report for European Application No. 03257194.5, dated March 1, 2004.			
TTR				
UUR				
VVR				
WWR				
XXR				
YYR				

Examiner

Date Considered: 3/18/05

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Document Number: 081468-0306527

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of
Arjo Jan BLEEKER
Application No.: 10/715,116

Group Art Unit: 2851

Examiner: Unassigned Fuller

Filed: November 18, 2003

Confirmation No.: Unassigned

For: Lithographic Apparatus and Device Manufacturing Method

INFORMATION DISCLOSURE STATEMENT

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Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
RA	Joeri LOF et al.	10/705,805	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Joeri LOF et al.	10/705,783	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Helmar VAN SANTEN et al.	10/743,271	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Johannes C.H. MULKENS et al.	10/743,266	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Antonius T.A.M. DERKSEN et al.	10/705,785	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Klaus SIMON et al.	10/724,402	12/01/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Joeri LOF et al.	10/705,816	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Bob STREEFKERK et al.	10/719,683	11/24/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
RA	Joannes T. DESMIT et al.	10/705,804	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card

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To: U.S. Department of Commerce
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Dkt. No.

M#

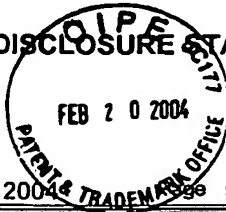
Client Ref.

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0306527

P-0382.010-US

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**



Applicant: Arno Jan BLEEKER

Appln. No.: 10/715,116

Filing Date: November 18, 2003

Examiner: Unassigned

Group Art Unit: Unassigned

Date: February 20, 2004

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of

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U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
PA	AR 2004/0000627A1	01/01/2004	Karl-Heinz SCHUSTER			
PA	BR 6,600,547	07/29/2003	WATSON et al.			
PA	CR 2004/0021844 A1	02/05/2004	Yutaka SUENAGA			
	DR					
	ER					
	FR					
	GR					
	HR					
	IR					
	JR					
	KR					
	LR					
	MR					
	NR					

FOREIGN PATENT DOCUMENTS

Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
				Enclosed	No
OR					
PR					
QR					
RR					
SR					
TR					
UR					
VR					
WR					
XR					

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

YR	H. Hogan, "New Semiconductor Lithography Makes a Splash", PHOTONICS SPECTRA, Photonics TechnologyWorld, October 2003 Edition, pgs. 1-3				
ZR	S. Owa and N. Nagasaka, "Potential Performance and Feasibility of Immersion Lithography", NGL Workshop 2003, July 10, 2003, Slide Nos. 1-33.				
AAR					
BBR					
CCR					
DDR					

Examiner

Date Considered: 3/8/05

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Nov 18, 2003

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Atty. Dkt. No.	M#	Client Ref.
	306527	P-0382.010-US

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Applicant: Amo J. BLEEKER

Appl. No.: Unknown

Filing Date: November 18, 2003

Date: November 18, 2003 Page 1 of 3

Examiner: Unknown Group Art Unit: Unknown

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
PA	AR	3,573,975	04/1971	Dhaka <i>et al.</i>	117	212	
PA	BR	3,648,587	03/1972	Stevens	95	44	
PA	CR	4,346,164	08/1982	Tabarelli <i>et al.</i>	430	311	
PA	DR	4,396,705	08/1983	Akeyama <i>et al.</i>	430	326	
PA	ER	4,480,910	11/1984	Takanashi <i>et al.</i>	355	30	
PA	FR	4,509,852	04/1985	Tabarelli <i>et al.</i>	355	30	
PA	GR	5,040,020	08/1991	Rauschenbach <i>et al.</i>	355	53	
PA	HR	5,121,256	06/1992	Corle <i>et al.</i>	359	664	
PA	IR	5,610,683	03/1997	Takahashi	355	53	
PA	JR	5,715,039	02/1998	Fukuda <i>et al.</i>	355	53	
PA	KR	5,825,043	10/1998	Suwa	250	548	
PA	LR	5,900,354	05/1999	Batchelder	430	395	
PA	MR	6,191,429	02/2001	Suwa	250	548	
PA	NR	6,560,032	05/2003	Hatano	359	656	

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		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclose	No
PA	OR	WO 99/49504	09/1999	PCT	Fukami <i>et al.</i>	X		X	
PA	PR	EP 0023231	02/1981	Europe	Tabarelli <i>et al.</i>	X			
PA	QR	EP 0418427	03/1991	Europe	Miyake	X		X	
PA	RR	EP 1039511	09/2000	Europe	Murakimi <i>et al.</i>	X		X	
PA	SR	DD 224448	07/1985	German	Hesse <i>et al.</i>		X		
PA	TR	DD 242880	02/1987	German	Kuch		X		
PA	UR	FR 2474708	07/1981	France	Letellier		X		
PA	VR	JP 62-065326	03/1987	Japan	Moriuchi	X			
PA	WR	JP 62-121417	06/1987	Japan	Nakazawa	X			
PA	XR	JP 63-157419	06/1988	Japan	Nakasuji	X			

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

PA	YR	EP Search Report for EP 02257938 dated September 25, 2003						
PA	ZR	M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001						
PA	AAR	M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356						
PA	BBR	M. Switkes <i>et al.</i> , "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002						

Examiner: [Signature] Date Considered: 3-8-05

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Applicant: Arno J. BLEEKER

Appl. No.: Unknown

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Examiner: Unknown

Group Art Unit: Unknown

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
PA	CCR 6,603,130	08/2003	Blisschops <i>et al.</i>	250	492.1	
PA	DDR 6,633,365	10/2003	Suenaga	355	53	
PA	EER 2002/0163629	11/2002	Switkes <i>et al.</i>	355	53	
PA	FFR 2003/0123040	07/2003	Almog	355	69	
PA	GGR 2003/0174408	09/2003	Rostalski <i>et al.</i>	359	642	
	HHR					
	IIR					
	JJR					
	KKR					
	LLR					
	MMR					
	NNR					
	OOR					
	PPR					

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
PA	QQR JP 04-305915	10/1992	Japan	Ozeki <i>et al.</i>	X			
PA	RRR JP 04-305917	10/1992	Japan	Ozeki <i>et al.</i>	X			
PA	SSR JP 06-124873	05/1994	Japan	Takahashi	X		X	
PA	TTR JP 07-220990	08/1995	Japan	Fukuda <i>et al.</i>	X			
PA	UUR JP 10-228661	08/1998	Japan	Kurokawa	X			
PA	VVR JP 10-255319	09/1998	Japan	Suenaga <i>et al.</i>	X			
PA	WWR JP 10-303114	11/1998	Japan	Suwa	X		X	
PA	XXR JP 10-340846	12/1998	Japan	Kudo	X		X	
PA	YYR JP 2001-091849	04/2001	Japan	Aizaki <i>et al.</i>	X			
	ZZR							

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PA	AAAR	B.J. Lin, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002			
PA	BBBR	B.J. Lin, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997			

Examiner

Date Considered: 3/8/05

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				Appln. No.: Unknown		
				Filing Date: November 18, 2003		
				Examiner: Unknown Group Art Unit: Unknown		
Date: November 18, 2003 Page 3 of 3						
U.S. PATENT DOCUMENTS						
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	CCC					
	DDD					
	EEE					
FOREIGN PATENT DOCUMENTS						
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					Translation Readily Available	
	FFFF				Enclosed	No
	GGG				Enclose	No
OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)						
PA	HHH	B.J. Lin, "The Paths To Subhalf-Micrometer Optical Lithography", SPIE Vol. 922, Optical/Laser Microlithography (1988), pp. 256-269				
PA	IIIR	G.W.W. Stevens, "Reduction of Waste Resulting from Mask Defects", Solid State Technology, August 1978, Vol.21 008, pp. 68-72				
PA	JJIR	S. Owa et al., "Immersion Lithography; its potential performance and issues", SPIE Microlithography 2003, 5040-186, February 27, 2003				
PA	KKK	S. Owa et al., "Advantage and Feasibility of Immersion Lithography", Proc. SPIE 5040 (2003)				
PA	LLL	Nikon Precision Europe GmbH, "Investor Relations - Nikon's Real Solutions", May 15, 2003				
	MMM	H. Kawata et al., "Optical Projection Lithography using Lenses with Numerical Apertures Greater than Unity", Microelectronic Engineering 9 (1989), pp. 31-36				
	NNN	J.A. Hoffnagle et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309				
	OOO	B.W. Smith et al., "Immersion Optical Lithography at 193nm", FUTURE FAB International, Vol. 15, July 11, 2003				
	PPP	H. Kawata et al., "Fabrication of 0.2µm Fine Patterns Using Optical Projection Lithography with an Oil Immersion Lens", Jpn. J. Appl. Phys. Vol. 31 (1992), pp. 4174-4177				
	QQQ	G. Owen et al., "1/8µm Optical Lithography", J. Vac. Sci. Technol. B., Vol. 10, No. 6, November/December 1992, pp. 3032-3036				
	RRR					
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	UUU					
	VVV					
	WWW					
	XXX					
	YYY					
Examiner <i>R. J. H.</i>				Date Considered: 3/8/05		

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